REMARKS

Claims 1, 3, 5-7, 9 and 11-14 are in this application and are presented for consideration. By this amendment, Applicant has amended claims 1, 3, 5, 6, 9 and 11. Claims 2, 4, 8 and 10 have been canceled. Applicant has also added new claims 12-14.

The present invention relates to a wireless access method and a wireless system. The method and the system comprise performing point-to-multipoint type communication with a mobile radio terminal by providing an RF transceiver in each of a plurality of access point stations. Point to point communication is performed with other access point stations by providing other RF transceivers in each of the access point stations. The access point stations include a control access point station and a plurality of repeater access point stations The control access point station performs signal modulation/demodulation. One of the repeater access point stations divides a signal into a first signal and a second signal when the repeater access point station receives a signal from another of the repeater access point stations or the control access point station. The one repeater access point station broadcasts and delivers the first signal to each mobile radio terminal located within a coverage area of the one repeater access point while transmitting at the same time the second signal to another access point station. The second repeater access point station receives a mobile radio terminal signal from one of the mobile radio terminals located within the coverage area of the one repeater access point stations. The one repeater access point station transmits the mobile radio terminal signal to one of another repeater access point station and the control access point station based on a non-reproduction scheme. The signal processing at each access point station is performed in

an IF frequency band obtained by performing down-converting from an RF frequency band. This allows all access point stations to have high-quality frequency stability even though each communication link between RF transceivers may utilize different millimeter-wave frequencies. This advantageously provides a wireless access system that requires only one control access station point. This significantly reduces the cost of constructing the wireless access system since only one control access point station is necessary. The prior art as a whole fails to disclose such features or such cost effective advantages.

Johnson et al. discloses a wireless cellular communication in which groups of cellular base stations communicate with a central office via a narrow-band millimeter wave trunk line. The transceivers are equipped with antennas providing beam divergence small enough to ensure efficient spatial and directional partitioning of the data channels so that an almost unlimited number of transceivers are able to simultaneously use the same millimeter wave spectrum. A large number of base stations are each allocated a few MHz portion of a 900 MHz bandwidth of the millimeter wave trunk line. A first transceiver transmits at a first bandwidth and receives at a second bandwidth both within the above spectral range. A second transceiver transmits at the second bandwidth and receives at the first bandwidth. Antennas maintain beam directional stability to less than one-half the half-power beam width. In a preferred embodiment the first and second spectral ranges are 92.3-93.2 Ghz and 94.1-95.0 Ghz and the half power beam width is about 0.36 degrees or less. The low frequency band width is efficiently utilized over and over again by dividing a territory into small cells and using low power antenna. A higher frequency bandwidth is efficiently utilized over and over again by using transmitting antennae

that are designed to produce very narrow beams directed at receiving antennae. In a preferred embodiment, cellular base stations are prepackaged for easy quick installation at convenient locations such as the tops of commercial buildings.

Johnson et al. fails to teach and fails to suggest the combination of a second repeater access point station that divides a signal that is received from one of a first repeater access point station and a control access point station into a first signal and a second signal. According to the present invention, the second repeater access point station delivers the first signal to each mobile radio terminal located within a coverage area of the second repeater access point and, at the same time, transmits the second signal to another access point station. At most, Johnson et al. discloses a system that receives millimeter-wave signals from a central and converts them to a cellular band for transmission by a cell base station. According to Johnson et al., each base station picks off the signals in its 32 MHz slice of a 91-93 GHz spectrum, down-converts this band to a cell phone band and broadcasts it while the 91-93 GHz is retransmitted to the next base station. However, Johnson et al. fails to disclose any teaching that base station divides the 91-93 GHz signal into two separate signals as claimed. In contrast to the present invention, Johnson et al. merely discloses that the base stations act as relays to transmit the same signal from one base station to another station wherein each base station receives signals within a particular frequency range. Compared with Johnson et al., one access point station of the present invention splits a signal received from another access point station wherein one of the signals is sent to each mobile radio terminal at the same time that the other signal is transmitted to another one of the access point stations. This significantly reduces costs of constructing the

wireless access system since only one control access point station is required instead of a plurality of control access point stations as provided in conventional techniques. Johnson et al. fails to disclose such cost-saving advantages since Johnson et al. only discloses that the base stations act as relays, which do not split any signal as claimed. In fact, Johnson et al. fails to disclose that signal processing at each access point station is performed in an IF frequency, which is obtained by performing down-converting from a RF frequency band. This advantageously attains the same IF frequency band so that all of the access point stations have high-quality frequency stability, even though each communication link between RF transceivers may utilize different millimeter-wave frequencies. Johnson et al. fails to disclose such frequency stability advantages since Johnson et al. does not disclose the signal processing at each access point station as claimed. As such, the prior art as a whole takes a different approach and fails to teach or suggest each feature of the claimed combination. Accordingly, Applicant respectfully requests that the Examiner favorably consider claims 1 and 6 as now presented and all claims that respectively depend thereon.

Claims 5 and 11 have been rejected under 35 U.S.C. 103(a) as being obvious over Johnson et al. in view of NPL document "Millimeter-wave Ad-hoc Wireless Access System" ("NPL1" hereinafter).

Although NPL1 discloses a millimeter-wave ad-hoc wireless access system, the references as a whole fail to teach or suggest each feature of the claimed combination. Specifically, Johnson et al. fails to provide any teaching or suggestion for the combination of a plurality of access point stations wherein at least one of the access point stations divides a

signal received from another access point station into two signals wherein one signal is transmitted to mobile terminal units and the other signal is transmitted to another access point station. As such, all claims define over the prior art as a whole.

Applicant has added new claims 12-14. New independent claim 12 provides for features similar to those found in claim 1, but in different claim language. New dependent claims 13 and 14 are based on claim 12 and have been added to further clarify the features of the invention. Applicant respectfully requests that the Examiner favorably consider new claims 12-14.

Further and favorable consideration on the merits is requested.

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DATED: October 6, 2008

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